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ABSTRACT

In 1987, the National Association for the Education of Young Children published "Keeping Current in Child Care Research: An Annotated Bibliography," by Carollee Howes, which reviewed child care research through 1987. In 1999, the Center for Early Education and Development updated the original review to include studies from 1987 to 1999. This update was created for participants in the second Annual Minnesota Child Care Research conference: Welfare Reform and the Lives of Children. The update is organized in the same format as the original bibliography. The first four sections review research that continues to address questions raised in the 1970s: Will child care attendance be harmful to the child? What benefits do children receive from child care? Can child care serve as an effective intervention program in the short and long term? For example, included are recent data from the Abecedarian project, a longitudinal study begun in 1972 detailing the effectiveness of child care as an intervention for at-risk children. The next five sections of the update highlight studies that address research questions begun in the 1980s: What features distinguish high- from low-quality child care? What are the effects of age of entry, length of day, and total time in child care? What is the relation between family factors and child care? These sections include information from several well-known studies that have greatly influenced how we think about child care, such as the Cost, Quality, and Outcomes Study; the Florida Quality Improvement Study; and the National Child Care Staffing Study. Finally, new sections were created in the update for studies on family child care and on inclusive settings. These two areas have been studied extensively since 1987, with enough research to warrant separate sections for each. (HTH)

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Introduction

In 1987, the National Association for the Education of Young Children published *Keeping Current in Child Care Research: An Annotated Bibliography*, by Carollee Howes. This valuable resource reviewed child care research through 1987. In 1999, the Center for Early Education and Development updated the original review to include studies from 1987 to 1999. This update was created for participants in the second Annual Minnesota Child Care Research Conference: Welfare Reform and the Lives of Children. We believe, however, that a wider audience will find this update useful.

This update is organized in the same format as the original bibliography. The first four sections review research that continues to address questions raised in the 1970s: Will child care attendance be harmful to the child? What benefits do children receive from child care? Can child care serve as an effective intervention program in the short and long term? For example, we include recent data from the Abecedarian project, begun in 1972. This longitudinal study details the effectiveness of child care as an intervention for at-risk children.

The next five sections highlight studies that address research questions begun in the 1980s. What features distinguish high- from low-quality child care? What are the effects of age of entry, length of day, and total time in child care? What is the relation between family factors and child care? These sections include information from several well-known studies that have greatly impacted how we think about child care, such as the Cost, Quality, and Outcomes Study; the Florida Quality Improvement Study; and the National Child Care Staffing Study.

Finally, we created new sections for studies on family child care and inclusive settings. These two areas have been studied extensively since 1987, with enough research that a separate section for each seemed warranted.

Most of the research in our update continues to examine questions posed earlier, yet new questions continue to emerge. For example, just when those in the early childhood field have begun to feel more confident about what constitutes high-quality child care (low staff turnover, high-quality teacher-child interactions, safe and healthy environments, etc.), many people have begun to notice that parents often disregard the advice of child care experts. Thus, we are beginning to ask questions such as: What do parents actually look

for when they choose child care? How well is the current child care system meeting the needs of parents, especially single mothers, who are leaving welfare? It is our hope that this update will provide a comprehensive look at what we have learned about child care so far, so that early childhood professionals will use that information to continue searching for answers to both the old and the new questions.

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Attachment

Reference	Sample Description	Measures	Results
Belsky & Rovine (1988)	Data from 2 longitudinal studies of infant and family development were combined and analyzed 149 infants (90 males) Ages 12 and 13 months 20 or more hours of care per week Working class and middle class SES Married parents	Interviews Strange Situation	1. Infants exposed to 20 or more hours of care per week were more likely to be classified as insecurely attached to the mother and to avoid the mother on reunion than were infants in care fewer than 20 hours per week.
Lamb, Sternberg, & Prodromidis (1992)	Data from 13 studies were combined and analyzed 897 infants (493 males) and their mothers Ages 11 to 24 months Mothers averaged 32.6 hours of paid work per week	Strange Situation	1. Secure attachments were significantly more common among infants in exclusive maternal care. 2. Insecure attachments were significantly more common among those infants assessed after 15 months of age and among those who entered care between 7 and 12 months of age, rather than before. 3. Extent of nonmaternal care was not significantly associated with attachment classifications.
NICHD Early Child Care Research Network (1997)	1,153 mothers and their babies chosen from among 31	Assessment of Infant Security Attachment	1. Use of non-maternal care did not make a significant difference in children's attachment security.

	hospitals in 9 states 24% ethnic minority 14% single mothers	Strange Situation Attitude toward Maternal Employment Questionnaire Infant Temperament Questionnaire NEO Personality Inventory Center for Epidemiological Studies Depression Scale Infant Toddler HOME Scale Observational Record of the Caregiving Environment	2. Infants were less likely to be secure when low maternal sensitivity/responsiveness was combined with poor-quality child care, more than minimal amounts of child care, or more than one care arrangement. 3. Boys who were in many hours of care and girls who were in minimal hours of care were somewhat less likely to be securely attached.

References: Attachment

Belsky, J., & Rovine, M. J. (1988). Nonmaternal care in the first year of life and the security of infant-parent attachment. *Child Development, 59*(1), 157-167. EJ 367 881.

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Social Development

Reference	Sample Description	Measures	Results
Andersson (1989)	119 Swedish children from their first year up to the age of 8 Ages 3 and 4 years at start of study	Cognitive measures Social competence	1. Children entering day care at an early age performed significantly better on cognitive tests and received more positive ratings from their teachers in terms of school achievement and social-personal attributes than did children entering day care at later ages and those in home care. 2. The author hypothesizes that two factors contribute to these positive results: Sweden's policy of providing for parents to stay home with children for the first 6 months of their lives and the generally high quality of Swedish day care.
Deater-Deckard, Pinkerton, & Scarr	141 mothers, 140 caregivers, and 72	Early Childhood Environmental Rating Scale	1. Average center quality was low.

(1996)	teachers Majority European American 84% two-parent families	Infant/Toddler Environmental Rating Scale Parenting Stress Index Marshall Emotional Support Scale Parental Discipline Interview EAS Temperament Scale	2. Indicators of center quality were generally unrelated to mother and teacher ratings of behavioral adjustment (although there was some indication that teachers with more training experienced fewer conduct problems).
Dunn (1993)	60 children in 30 classrooms in 24 centers 90% White, 10% African American Middle SES 77% two-parent families Ages 3 to 5 years	Observational assessment, staff interviews, and questionnaires to measure classroom quality Direct assessment, teacher ratings, and child achievement tests to measure child outcomes	1. Children with married parents and those attending centers that offered less variety and more guidance were rated as better socially adjusted. 2. Children attending centers that provided more total limits had higher levels of complex social play. 3. Child:staff ratio and group size did not predict children's social and cognitive development.
Hestenes, Kontos, & Bryan (1993)	60 children in 26 centers (30 classrooms) Range of SES Race/ethnicity data not provided Ages 3 to 5 years	Observational assessment of classroom quality Direct assessment of child outcomes	1. Low levels of classroom engagement by teachers predicted more intense negative affect among children. 2. Children whose teachers showed high levels of classroom engagement displayed more intense positive affect (temperament and child demographics were controlled).
Holloway & Reichhart-Erickson (1988)	55 children attending 15 day care centers and nursery school (30 boys) 4% African American, 94% White, 2% Asian Mostly middle SES	Three scales from the Early Childhood Observation Instrument:Teacher-Child Interaction, Child-Child Interaction, and Physical Environment Child social problem solving was measured using an adapted procedure by Spivack & Shure	1. Children engaging in high-quality interactions with teachers and children attending centers with lower child:teacher ratios scored higher on test of social reasoning skills. 2. In centers that were

	91% two-parent families Age 4 years		better able to accommodate groups of varying sizes, had smaller classes, and offered a variety of age-appropriate materials, children scored higher on test of social reasoning skills. 3. In centers with a more spacious layout, children spent more time in focused, solitary play and less time observing. 4. Quality indicators were not significantly related to negative or positive social interactions with peers.
Howes & Hamilton (1993)	72 children (48 at follow-up) 5 centers (and one large family day care home) at start 54 centers over course of study 14% African American, 61% White, 25% Hispanic or Asian 67% middle SES Ages 1 to 2 years Follow-up at ages 4 to 5 years	Observational assessment of quality Direct assessment of child outcomes	1. Children having more changes in teachers were rated as lower in positive and gregarious behaviors and higher in social withdrawal and aggression. 2. Children who had secure teacher-child relationships (or relationships that changed in a positive direction) had more positive, gregarious, and prosocial interactions with their peers and were less withdrawn and aggressive. 3. Changes in children's child care center or setting were not related to children's social competence with peers.
Howes, Phillips, &	414 children	Waters and Deane Attachment	1. Children cared for

Whitebook (1992)	21% African American, 73% White SES includes subsidized children care centers and children of wealthy families Ages 15 to 54 months	Q-set Early Childhood or Infant/Toddler Environmental Rating Scale Peer Play Scale	in classrooms meeting Federal Interagency Day Care Requirements (FIDCR) ratios were more likely to be in classrooms rated good or very good in caregiving and activities. They were more likely to be securely attached to teachers and were more competent with peers. 2. Children in classrooms meeting FIDCR groups size were more likely to be in classrooms rated higher in classroom activities. They were more likely to orient to both adults and peers and were more competent with peers. 3. Children in classrooms rated higher on "appropriate caregiving" were more likely to be classified as secure. 4. Children in classrooms rated higher on "developmentally appropriate activities" were more likely to be both adult and peer oriented.
Howes, Smith, & Galinsky (1995)	880 children in 150 centers Range of SES and urban/rural settings in FL Ages 10 months to 5 years	Director interviews Arnett Scale of Caregiver Sensitivity Howes Involvement Scale Early Childhood Environmental Rating Scale Infant/Toddler Environmental Rating Scale Revised Howes Peer Play Scale Howes Object Play Scale	1. Changing child:teacher ratio requirements for infants from 6:1 to 4:1, and for toddlers from 8:1 to 6:1, resulted in more complex child play both with peers and objects, more secure attachment to caregivers, greater adaptive language proficiency, and fewer behavior problems (including aggression, anxiety, and

		Adaptive Language Inventory Preschool Behavior Questionnaire	hyperactivity). 2. Children in classrooms meeting professional standards for child:teacher ratios engaged in more elaborate peer play and had higher adaptive language scores, compared with children in classrooms with higher child:teacher ratios. 3. Children in classrooms that improved by shifting to teachers with CDA credentials or CDA equivalency had the largest increase in complexity of peer play and security of caregiver attachment. Children in classrooms with college-educated teachers who had early childhood training engaged in more complex peer play, had a more secure attachment with their caregiver, and had higher adaptive language scores. 4. After changes, teachers were more sensitive, positive, and responsive with children. 5. After changes, children evidenced more secure attachment and were rated as having fewer behavior problems.
Kontos (1991)	100 children in 10 centers (5 urban/nonprofit, 3 urban/profit, 1 rural/nonprofit, and 1	Child Development Program Evaluation-Indicator Checklist Caregiver Observation Form	1. Both family background and child care quality predicted children's development.

	rural/profit) 53 male Ages 3 to 5 years	Early Childhood Environmental Rating Scale Slosson Intelligence Test Test of Early Language Development Adaptive Language Inventory Preschool Behavior Questionnaire Classroom Behavior Inventory	2. Child care quality variables were significant predictors of social adjustment and marginal predictors of sociability.
McCartney et al. (1997)	120 centers from MA, VA, and GA 718 infants, toddlers, and preschoolers	Parental Modernity Scale Perceived work-family interference Parenting stress interference Assessment Profile for EC Programs Early Childhood Environmental Rating Scale Infant/Toddler Environmental Rating Scale Waters Attachment Q-set Social behavior observations	1. Few associations between teacher-child interaction and social outcomes were noted. 2. Teacher-child interactions were associated with social bids by preschoolers and toddlers. 3. Higher work-family interference was associated with poorer social outcomes. 4. Children in nonprofit centers had better social outcomes on some measures.
Peisner-Feinberg & Burchinal (1997) (Part of Cost, Quality, and Outcomes Study)	828 children in CA, CT, CO, and NC (52% boys) One-third ethnic minorities Two-thirds two-parent families	Early Childhood Environmental Rating Scale Early Childhood Observation Form Adult Involvement Scale Peabody Picture Vocabulary Test-Revised Attitudes/perceptions of competence Student-Teacher Relationship Scale	1. There is a positive relation between child care quality and children's cognitive and socio-emotional outcomes. 2. Stronger positive effects of child care outcomes were observed for children from more at-risk backgrounds. 3. There was no evidence that children from more advantaged families were buffered from the effects of poor-quality care.
Peisner-Feinberg, Clifford, Culkin, Howes, & Kagan (1999)	By second grade, 418 children from the original Cost, Quality, and	Early Childhood Environmental Rating Scale Caregiver Interaction Scale	1. Children in higher-quality child care centers performed better on

	Outcomes Study 51% boys 30% children of color	UCLA EC Observation Form Adult Involvement Scale Instructional Environment Observation Scale (Second Grade) Student-Teacher Relationship Scale Peabody Picture Vocabulary Test-Revised Woodcock-Johnson Tests of Achievement-Revised Inventory of Classroom Behavior Teacher Assessment of Social Behavior Parent surveys	measures of cognitive skills and social skills. 2. Quality of care continued to affect development at least through kindergarten and, for many, through second grade. 3. Children who were at-risk were more sensitive to the negative effects of poor-quality care, and received more benefits from high-quality care. These benefits were sustained through second grade. 4. The quality of the classroom affects cognitive skills, and the teacher-child relationship influences social skills. 5. Children who attended higher-quality child care had better cognitive and social skills in second grade, even after taking into account kindergarten and second-grade classroom experiences. 6. Children who experienced more positive classroom climates in child care had better relationships with peers in second grade.
Phillips, McCartney, & Scarr (1987)	166 families in 9 centers in Bermuda Ages 36 to 68 months	Early Childhood Environmental Rating Scale Director interviews of classroom characteristics, ratios, caregiver training, director experience, etc.	1. Overall quality, caregiver-child verbal interactions, and director experience were each highly predictive of children's social development in child care

		Classroom Behavior Inventory Preschool Behavior Questionnaire Parent as Educator Interview	2. Family background characteristics were also significantly predictive of several social outcomes.
Vandell & Corasaniti (1990)	236 predominantly middle class 8-year-olds 84% White, 8% Black, 3% Asian American 72% two-parent families State with **minimal** child care standards	Retrospective parental recollections Teacher ratings of social, emotional, and academic functioning Classroom sociometric ratings Children's self-ratings Academic grades Conduct grades Standardized test scores	1. Children with more extensive child care experiences since infancy were rated as having poorer peer relationships, work habits, and emotional health. 2. Extensive infant care was associated with poorer academic and conduct report card grades and lower standardized test scores.
Vandell, Henderson, & Wilson (1988)	20 White, middle-class 4-year-olds and 8-year-olds (same sample over a 4-year period) in 6 day care centers of varying quality	Observational assessment of classroom quality Direct and videotaped assessment of children Maternal, peer, and observer ratings of child behavior	1. Children in higher-quality day care were rated as more socially competent, had fewer unfriendly peer interactions, were happier, and received fewer shy nominations from peers. 2. Significant continuity of behaviors was found from age 4 to age 8. 3. Having positive interactions with adults at age 4 was significantly correlated with ratings of empathy, social competence, and peer acceptance at age 8.

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Phillips, D., McCartney, K., & Scarr, S. (1987). Child-care quality and children's social development. *Developmental Psychology, 23*(4), 537-543. EJ 361 532.

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Cognitive Development

Reference	Sample Description	Measures	Results
Andersson (1989)	119 Swedish children from their first year up to the age of 8 years Ages 3 and 4 years at start of study	Cognitive measures Social competence	1. Children entering day care at an early age performed significantly better on cognitive tests and received more positive ratings from their teachers in terms of school achievement and social-personal attributes than did children entering day care at later ages and those in home care. 2. The author hypothesizes that two factors contribute to these positive results: Sweden's policy of providing for parents to stay home with children for the first 6 months of their lives, and the generally high quality of Swedish day care.
Burchinal, Roberts, Nabors, & Bryant (1996)	79 African American children attending centers in 2 small adjacent southeast cities 69% of families were under 185% of federal poverty 68% headed by a single parent	Bayley Scales of Infant Development Sequenced Inventory of Communication Development Communication and Symbolic Behavior Scales	1. Child care quality was positively correlated with cognitive development, language development, and communication skills.

		Infant/Toddler Environmental Rating Scale Early Childhood Environmental Rating Scale HOME for Infants	2. Process measures of quality of care independently related to the infant's cognitive development. 3. Infant:adult ratio independently related to the infant's overall communication skills.
Caughy, DiPietro, & Strobino (1994)	867 children from the National Longitudinal Survey of Youth (464 boys) 47% non-Black/non-Hispanic; 34% Black; 19% Hispanic Ages 5 to 6 years	HOME Scale (shortened version) Peabody Individual Achievement Test	1. Children from "impoverished home environments" who attended day care during the first 3 years of life scored higher on reading recognition tests and math tests. 2. The effects on reading scores were greatest for children who began day care before the age of 1. 3. The effects on math scores were greatest for children in center care.
Dunn (1993)	60 children in 30 classrooms in 24 centers 90% White, 10% African American Middle SES 77% two-parent families Ages 3 to 5 years	Observational assessment, staff interviews, and questionnaires to measure classroom quality Direct assessment, teacher ratings, and child achievement tests to measure child outcomes	1. Children attending classrooms with higher overall quality and whose caregivers had a child-related college major and less experience in the center scored higher on a test of intelligence. 2. Child:staff ratio and group size did not predict children's social and cognitive development.
Howes, Smith, & Galinsky (1995)	880 children in 150 centers Range of SES and urban/rural settings in FL Ages 10 months to 5 years	Director interviews Arnett Scale of Caregiver Sensitivity Howes Involvement Scale	1. Gains in intellectual and emotional development continued to improve from 1994.

		Early Childhood Environmental Rating Scale Infant/Toddler Environmental Rating Scale Revised Howes Peer Play Scale Howes Object Play Scale Adaptive Language Inventory Preschool behavior questionnaire	2. Children were more actively engaged and spent more time learning than they did in 1992 and 1994. 3. Teachers were overall more responsive. Teacher sensitivity and classroom quality did not increase or decrease.
Peisner-Feinberg & Burchinal (1997) (Part of Cost, Quality, and Outcomes Study)	828 children in CA, CT, CO, and NC (52% boys) One-third ethnic minorities Two-thirds two-parent families	Early Childhood Environmental Rating Scale Early Childhood Observation Form Adult Involvement Scale Peabody Picture Vocabulary Test-Revised Attitudes/Perceptions of Competence Student-Teacher Relationship Scale	1. There is a positive relation between child care quality and children's cognitive and socioemotional outcomes. 2. Stronger positive effects of child care outcomes were observed for children from more at-risk backgrounds. 3. There was no evidence that children from more advantaged families were buffered from the effects of poor-quality care.
Peisner-Feinberg, Clifford, Culkin, Howes, & Kagan (1999)	By second grade, 418 children from the original Cost, Quality, and Outcomes Study 51% boys 30% children of color	Early Childhood Environmental Rating Scale Caregiver Interaction Scale UCLA Early Childhood Observation Form Adult Involvement Scale Instructional Environment Observation Scale (Second Grade) Student-Teacher Relationship Scale	1. Children in higher-quality child care centers performed better on measures of cognitive skills and social skills. 2. Quality of care continued to affect development at least through kindergarten and, for many, through second grade. 3. Children who were at-risk were more sensitive to the

		Peabody Picture Vocabulary Test-Revised Woodcock-Johnson Tests of Achievement-Revised Inventory of Classroom Behavior Teacher Assessment of Social Behavior Parent surveys	negative effects of poor-quality care and received more benefits from high-quality care. These benefits were sustained through second grade. 4. The quality of the classroom affects cognitive skills, and teacher-child relationship influences social skills. 5. Children who attended higher-quality child care had better cognitive and social skills in second grade, even after taking into account kindergarten and second-grade classroom experiences. 6. Children who experienced more positive classroom climates in child care had better relationships with peers in second grade.
Vandell & Corasaniti (1990)	236 predominantly middle-class 8-year-olds 84% White, 8% Black, 3% Asian American 72% two-parent families State with **minimal** child care standards	Retrospective parental recollections Teacher ratings of social, emotional, and academic functioning Classroom sociometric ratings Children's self-ratings Academic grades Conduct grades Standardized test scores	1. Children with more extensive child care experiences since infancy were rated as having poorer peer relationships, work habits, and emotional health. 2. Extensive infant care was associated with poorer academic and conduct report card grades and lower standardized test scores.
Whitebook, Howes, & Phillips (1989) (National Child Care	227 day care centers High, middle, and low SES families	Early Childhood Environmental Rating Scale and Infant/Toddler Environmental Rating	1. Child care staff education and work environments affect quality of services

Staffing Study)	1,309 teachers/staff were interviewed, and 260 children were assessed	Scale Scale of Staff Sensitivity Child Assessments of Waters and Deane Attachment Q-set and the Howes Peer Play Scale Feagans and Farran Adaptive Language Inventory Peabody Picture Vocabulary	children receive. 2. Children in lower-quality centers were less competent in language and social development.

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Peisner-Feinberg, E. S., & Burchinal, M. R. (1997). Relations between preschool children's child care experiences and concurrrent development: The Cost, Quality, and Outcomes Study. *Merrill-Palmer Quarterly, 43*(3), 451-477. EJ 554 326.

Peisner-Feinberg, E. S., Clifford, R. M., Culkin, M., Howes, C., & Kagan, S. L. (1999). The children of the Cost, Quality, and Outcomes Study go to school. Chapel Hill, NC: Frank Porter Graham Child Development Center, NCEDL. ED 449 883.

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Child Care as Early Intervention

Reference	Sample Description	Measures	Results
Frank Porter Graham Child Development Center (1999) (Abecedarian Project)	Same sample from original study (above), followed through 1999	Language and cognitive tests Demographic data	1. Young adults who received early educational intervention had significantly higher mental test scores from toddlerhood through age 21 than did those who were not in a treatment group. 2. Enhanced language skills probably increased the effects of intervention on cognitive skills. 3. Reading achievement scores were higher among those who received intervention. The differences between groups remained through age 21. 4. Medium effects were seen for math achievement. 5. Those who were treated were more likely to be in school at age 21. 6. 35% of treatment group graduated from a 4-year college; 14% in control group graduated from a 4-year college. 7. Intervention group

			members were an average of 1 year older when their first child was born.
Ramey & Campbell (1991) (Abecedarian Project)	Approximately 90 children identified as being at-risk for academic underachievement Mostly African American	Wechsler Preschool and Primary Scale of Intelligence (at 60 months) Wechsler Intelligence Scale for Children-Revised (at 78 and 96 months) Academic achievement tests (in elementary grades) Classroom Behavior Inventory Child Behavior Checklist	1. Positive effects of intervention were reported on children's intellectual competence and academic achievement (reading and math). Less grade retention was also reported. 2. No significant effects were found in parents' perceptions of behavior. 3. These positive effects were proportional to the amount of intervention received.
Schweinhart, Barnes, Weikart, Barnett, & Epstein (1993) (The High/Scope Perry Preschool Study through Age 27)	123 children from African American families in Ypsilanti, MI (includes control with no preschool experience) Annual assessment from Ages 3 to 11 years Ages 14 to 15 years Age 19 years Age 27 years 4.9% cases missing	Demographic data	At age 27, program group had: 1. Significantly higher monthly earnings. 2. Significantly higher percentage of home ownership and second car ownership. 3. Significantly higher level of schooling completed (71% completed 12th grade or higher). 4. Significantly lower percentage receiving social services. 5. Significantly fewer arrests.
Wasik, Ramey, Bryant, & Sparling (1990)	64 infants judged to be at-risk for delayed development (assigned to three groups: child development center plus family education, family education, and control group)	Bayley Scales of Infant Development (at 6, 12, and 18 months) Stanford-Binet Intelligence Test (at 24, 36, and 48 months) McCarthy Scales of Children's Abilities (at 30, 42, and 54 months) HOME Inventory	1. After assessment at 6 months, subsequent scores on developmental assessments were greater for children in the child care plus family education group than in the other two groups.

(Although the quality of the Frank Porter Graham Child Development Center was not assessed, this program is widely considered to be a high-quality program)

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Specific Indicators of Child Care Quality

Reference	Sample Description	Indicators	Measures	Results
Arnett (1989)	59 caregivers in 22 centers in Bermuda Children were preschool age Level 1: no training Level 2: two training courses Level 3: four-course Bermuda College training program Level 4: 4-year college education in ECE or related subject	Caregiver training	Paternity Modernity Scale (childrearing attitudes) Caregiver Interaction Scale	1. Training is related to attitudes and behavior of caregivers. Training is related to less authoritarian child-rearing attitudes, and more positive interaction style, less punitiveness, less detachment. 2. Caregivers with Level 4 training were distinct from the other three groups—they were least authoritarian, highest in interaction factors, less punitive, and less detached.
Gallagher, Rooney, & Campbell (1999)	Licensing requirements in NC, CO, CT, and CA Results of the Cost, Quality, and Child Outcomes Study	State licensing requirements		1. State regulations focus more on child protection than they do on enhancing child development. 2. Child care regulations do not match what we tend to call "quality."
Ghazvini & Readdick (1994)	12 child care centers	Parent-caregiver communication	Parental Perceptions of	1. Caregivers rated all forms of

	subsidized and nonsubsidized centers		Communication Questionnaire Early Childhood Environmental Rating Scale	parent-caregiver communication as more important and occurring more frequently than did parents. 2. Frequency of parent-caregiver communication and quality of child care were positively correlated.
Howes (1997) (Analysis of Cost, Quality, and Outcomes Study, and Florida Quality Improvement Study)	Study 1: 655 full-day classrooms in CA, CO, CT, and NC; 760 children Study 2: 410 classrooms in FL; 820 children	Adult:child ratio Teacher background	Study 1: Teacher reports, Classroom Interaction Scale, Adult Involvement Scale, PPVT, WJ-R Study 2: Teacher reports, Adult Involvement Scale, Revised Peer Play Scale	1. Teachers with the most education were the most effective. 2. In the CQO Study, classrooms that complied with professional standards had more effective teachers and more positive child outcomes. 3. No interactive effects between ratio and teacher background were found.
Howes & Norris (1997)	100 family child care homes observed originally 28 providers who did enroll additional children were revisited	Group size Age mix	Family Day Care Environmental Rating Scale	1. Providers were similar in environmental quality scores before and after adding 2 additional school-age children. 2. Providers were rated as less sensitive on the post-enrollment visit. 3. Provider and children's activities were similar on the two visits.
Kontos, Howes, & Galinsky (1996)	130 family providers and 112 comparison providers in CA, TX, and NC Providers in study group received training	Provider training	Provider demographics Interviews Arnett Scale of Provider Sensitivity Adult Involvement	1. Providers who seek training are not substantially different in quality of care offered. 2. Training can have a modest positive effect on several

			Scale Family Day Care Rating Scale	aspects of quality and intentionality.
Love, Ryer, & Faddis (1992)	112 volunteer classrooms that were randomly assigned to staff:child ratios of 1:8, 1:9, and 1:10	Adult:child ratios Teacher training DAP Caregiver behavior	Classroom interview Staff characteristics interview Program director interview Assessment Profile for Early Childhood Programs Arnett Scale of Caregiver Behavior Preschool Classroom Snapshot Developmental Practices Inventory Child Stress Behavior Instrument Behavior Problem Index	1. Increasing staff ratios from 1:8 to 1:9 or 1:10 did not have a measurable effect on program quality. 2. Classrooms with higher ratings on structure variables had instructional activities and caregiver-child interactions that were more developmentally appropriate, and there was less crying and fighting observed among children. 3. In classrooms that were more developmentally appropriate, caregivers were more attentive and encouraging, less harsh and critical, and less detached in their interactions with children. 4. There was less stress behavior among children when caregivers were rated as being attentive and encouraging. 5. There was some evidence that caregivers with higher levels of EC training implemented more developmentally appropriate classrooms.
NICHD Early Child Care Research Network (1996)	576 infants in centers, child care homes, in-home sitting	Adult:child ratio Type of care	Observational Record of the Caregiving Environment	1. Caregivers were rated as providing more positive caregiving when

	arrangements, with grandparents, and with fathers Age 6 months	Caregiver beliefs Environment	(developed by NICHD) HOME Inventory Assessment Profile for Early Childhood Programs Caregiver interviews and questionnaires	group sizes and child:adult ratios were smaller and when caregivers held less authoritarian beliefs about child rearing. 2. In addition, small group size, and safe, clean, and stimulating physical environments were consistently associated with positive caregiving behaviors in each setting.
Olenick (1989)	204 classrooms in 100 centers in CA One-third subsidized programs	Adult:child ratios Training Work environment	Early Childhood Environmental Rating Scale Indirect costs Direct costs	1. Quality is affected by cost factors. 2. Programs that allocate resources to staff are most likely to be high-quality programs.
Phillipsen, Burchinal, Howes, & Cryer (1997)	224 infant/toddler and 509 preschool classrooms Nonprofit and for-profit 4 states: CA, CO, CT, and NC	State regulations Profit/nonprofit Caregiver characteristics Work environment	Early Childhood Environmental Rating Scale Infant/Toddler Environmental Rating Scale Caregiver Interaction Scale Teacher Involvement Scale	1. Overall, process quality (children's interactions with materials and adults) was higher in states with more stringent child care regulations, nonprofit centers, and preschool classrooms. 2. In infant/toddler classrooms, process quality was higher in classrooms with moderately experienced and better paid teachers, and more experienced directors. 3. In preschool classrooms, process quality was higher in classrooms with teachers with more education, a moderate amount of experience, and higher wages.

Scarr, Eisenberg, & Deater-Deckard (1994)	120 classrooms in each of 3 states (GA, VA, and MA) Ages less than 12 months to 60 months 21% African American, 73% White Roughly equal groups of infants, toddlers, and preschoolers	Work environment, ratios, group size	Infant/Toddler Environmental Rating Scale Early Childhood Environmental Rating Scale Assessment Profile for Preschool Programs Waters & Deane Attachment Q-set Peer Play Scale (revised)	1. Highest wage paid to a teacher was best indicator of process quality. 2. Ratios, group sizes, and staff turnover were less well correlated with process quality. 3. More than 80% of classrooms had some appropriate caregiving and activities. 4. Children in better-quality classrooms were more securely attached to teachers and more competent with peers. 5. Variations in quality correlated with structural variables such as group size and ratios.
Whitebook, Howes, & Phillips (1989) (National Child Care Staffing Study)	227 day care centers High, middle, and low SES families 1,309 teachers/staff were interviewed, and 260 children were assessed	Staff characteristics such as training and education, wages, and work environment	Early Childhood Environmental Rating Scale Infant/Toddler Environmental Rating Scale Scale of Staff Sensitivity Child assessments of Waters & Deane Attachment Q-set Howes Peer Play Scale Feagans and Farran Adaptive Language Inventory Peabody Picture Vocabulary	1. Child care staff education and work environments affect quality of services children receive. 2. The most important predictor of quality of care received among adult work environment variables is staff wages. 3. Better-quality centers are more likely to be operated as nonprofits, accredited by NAEYC, and located in states with higher-quality standards.
Whitebook, Howes, & Phillips (1998)	158 samples from original sample	Work environment	Telephone interviews with	1. Child care teaching staff

(National Child Care Staffing Study)		directors	continue to earn unacceptably low wages, even in a sample of relatively high-quality centers. 2. Increased public funding is rarely targeted to quality improvements (and so has not resulted in better wages or lower staff turnover). 3. Child care centers continue to experience high turnover. 4. Centers with lower turnover were rated higher in quality. 5. Although health coverage has improved, majority of centers still offer limited or no health coverage.

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Effects of Overall Child Care Quality

Reference	Sample Description	Quality Index	Measures	Results
Cost, Quality, and Child Outcomes Study Team (1995)	826 children in 181 centers Age 4 Centers in CA, CO, CT, and NC 15% African American, 68% White, 6% Hispanic, 4% Asian 63% of mothers have less than a bachelor's degree	Ratios Staff education and training Staff wages Experience of administrators Early Childhood Environmental Rating Scale Infant/Toddler Environmental Rating Scale	Early Childhood Environmental Rating Scale Infant/Toddler Environmental Rating Scale Staff questionnaires (from National Child Care Study) Caregiver Interaction Scale Teacher Involvement Scale Peabody Picture Vocabulary Test Woodcock-Johnson Tests of Achievement-Revised Classroom Behavior Inventory Student-Teacher Relationship Scale Attitudes/Perceptions of Competence Scale	1. Quality correlated with higher child:staff ratios, staff education, and experience of administrator. 2. Wages, education, and specialized training most important in differentiating between poor-, mediocre-, and good-quality centers. 3. Higher classroom quality index was associated with positive greater receptive language ability, higher premath skills, more advanced social skills, and more positive self-perceptions. 4. Effect of quality on receptive language was greater for minority children. 5. States with better licensing

				standards had fewer poor-quality centers. 6. Quality was poor to mediocre in nearly half of infant/toddler rooms; parents overestimated quality of care.
Howes (1988)	75 children enrolled in laboratory elementary school 12% African American, 69% White, 12% Hispanic, 6% Asian Mother's median education level = 14 years 70% two-parent families Child care experience at age 4: follow-up at first grade	Observational measures of classroom quality	Observational measures of classroom quality Teacher ratings of child outcomes	1. For girls, stable child care arrangements predicted academic skills, controlling for family characteristics. 2. For boys, stable arrangements and high-quality care predicted academic skills, controlling for family characteristics. 3. For both boys and girls, high-quality care predicted enhanced school skills and low behavior problems.
Howes & Smith (1995)	840 children 435 girls Center-based Ages 10 to 70 months 66% White, 34% African American 150 centers in FL	Early Childhood Environmental Rating Scale Infant/Toddler Environmental Rating Scale Teacher education and training	Attachment Q-set Early Childhood Environmental Rating Scale Infant/Toddler Environmental Rating Scale	1. Quality was minimally adequate. 2. Classrooms with more educated and trained teachers had higher Infant/Toddler Environmental Rating Scale and Early Childhood Environmental Rating Scale scores. 3. Children's cognitive activity is enhanced in classrooms rich in creative play activities and staffed by teachers who engage children in positive

				social interaction.
Kontos & Keyes (1999)	60 children (26 male) in 3 programs Middle to upper-middle SES Majority European American 6 non-native English speakers (fluent)	DAP criteria Teacher education	Observations via scan sampling Howes Involvement Scale	1. The probability of children engaging in complex interactions with objects and peers was related to classroom factors rather than to child characteristics. 2. Teacher interaction had no main effects on children's interactions with objects or peers.
Peisner-Feinberg, Clifford, Yazejean, Culken, Howes, & Kagan (1998)	Subsample from Cost, Quality, and Outcomes Study 826 children in year 1 560 children in year 2 448 children in year 3 One-half boys One-third ethnically diverse	Early Childhood Environmental Rating Scale Caregiver Interaction Scale UCLA Early Childhood Observation Form Adult Involvement Scale	Early Childhood Environmental Rating Scale Caregiver Interaction Scale UCLA Early Childhood Observation Form Adult Involvement Scale Peabody Picture Vocabulary Test-Revised Woodcock-Johnson Tests of Achievement-Revised Classroom Behavior Inventory Student-Teacher Relationship Scale	1. Children in better-quality child care have better cognitive and social outcomes. 2. These benefits apply to all children. 3. These benefits do last through the early school years.
Phillips, Scarr, & McCartney (1987)	166 children in 9 centers 78% Black Bermudians, 22% White	Staff:child ratios Director experience Caregiver	Early Childhood Environmental Rating Scale Interviews	1. Children in higher-quality care were rated by their parents as more considerate and sociable.

	Bermudians 68% two-parent families 85% spent most of work week in day care by age 2 years Ages 3 to 5½ years 3-month study, each center visited 3 times	turnover Child-adult verbal interactions	Assessment of child-adult verbal interactions Peabody Picture Vocabulary Test-Revised Preschool Language Assessment Instrument Preschool Behavior Questionnaire Classroom Behavior Inventory Parent questionnaires Parent as Educator Interview	2. Children in higher-quality care were rated by their teachers as more intelligent, more task oriented, and more anxious. 3. Quality of care was predictive of verbal intellectual functioning. 4. Age of entry and time in day care were poor predictors of children's development. 5. Amount of adult-child verbal interaction was a strong predictor of positive child outcomes. 6. Director experience was a strong predictor of positive child outcomes. 7. Verbal intelligence and language development was affected by staff:child ratios.

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Effects of Age of Entry

Reference	Sample Description	Age of Entry	Measures	Results
Andersson (1989)	119 Swedish children from their first year up to the age of 8 years Ages 3 and 4 years at start of study	6 months or older	Cognitive measures Social competence	1. Children entering day care at an early age performed significantly better on cognitive tests and received more positive ratings from their teachers in terms of school achievement and social-personal attributes than did children entering day care at later ages and those in home care. 2. The author hypothesizes that two factors contribute to these positive results: Sweden's policy of providing for parents to stay home with children for the first 6 months of their lives and the generally high quality of Swedish day care.
Caughy, DiPietro, & Strobino (1994)	867 children from the National Longitudinal Survey of Youth (464 boys) 47% non-Black/ non-Hispanic; 34% Black; 19% Hispanic Ages 5 to 6 years	Under age 1	HOME scale (shortened version) Peabody Individual Achievement Test	1. Children from "impoverished home environments" who attended day care during the first 3 years of life scored higher on reading recognition tests and math tests.

				2. The effects on reading scores were greatest for children who began day care before the age of 1.
Howes (1990)	80 children (same children examined in Howes & Olenick (1986)) 8 centers 9% African American, 74% White, 13% Hispanic, 1% Asian 76% two-parent families Ages 3 to 7 years (were 1½ to 3 years old in 1986)	Infancy	Observational assessment and caregiver reporting of classroom quality measures Direct assessment and parent and teacher ratings of child outcomes	1. Preschool children attending high-quality centers engaged in more social pretend activities, displayed more "positive affect" relative to angry and distressed behavior, and were rated by teachers as having sociable relations with peers. 2. Kindergarten children who entered lower-quality centers as infants were rated by teachers as more distractible, less task oriented, and less considerate compared with children who entered higher-quality centers as infants. 3. Among children enrolled as infants, child care quality (teacher socialization practices) best predicted child outcomes; among children enrolled as toddlers or preschoolers, family socialization practices best predicted child outcomes.

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Effects of Child's Total Experience in Child Care

Reference	Sample Description	Measures	Results
Bryant, Lau, Burchinal, & Sparling (1994)	145 Head Start children, 146 parents, and 32 teachers	Early Childhood Environmental Rating Scale DAP questionnaire for teachers Home Screening Questionnaire Kaufman Assessment Battery for Children Preschool Inventory Vineland Communication Domain Adaptive Social Behavior Inventory	1. 9% of classrooms met criteria for "good" on Early Childhood Environmental Rating Scale. 2. 71% of homes found to be "suspect," indicating little developmental stimulation. 3. No relationship between teacher variables and classroom quality were found. 4. Classroom quality did predict child outcomes on K-ABC Mental Processing and Achievement batteries and on the PSI measuring preacademic skills. 5. Teacher rating of child behavior was not related to quality of classroom or home environments.
Clarke-Stewart, Gruber, & Fitzgerald (1994)	150 (at the beginning of study) children in a variety of child care and home settings	Observations of home and child care settings Interviews with parents and	1. Children at home and children in day care had completely different experiences

		caregivers Children's cognitive and social development	during the day. 2. Children who were in child care centers were consistently more advanced in their development than were children who stayed home with mothers. 3. These advances were in cognitive development, social development, independence, dinnertime obedience, compliance requests, and social interactions with peers. 4. Children who spent more time in day care were most advanced in several areas, although this relationship was more complex. 5. Aspects of high-quality day care that seemed to be important in predicting development were structured learning opportunities, adult:child ratio and class size, opportunities to interact with other children, and a stimulating physical setting.
	84 boys Ages 24 to 48 months		
Epstein (1999)	109 Head Start classrooms 72 public school early childhood classrooms 110 private, nonprofit early childhood classrooms	Teacher interviews Arnett Global Rating Scale Early Childhood Environmental Rating Scale High/Scope Program Quality Assessment	1. Program quality in public schools was generally higher than other settings, especially in areas of teacher affect, motor development, and opportunities for plan and review.

	Two-thirds High/Scope 200 children 58% single-parent families 33% African American, 6% Latino American, 4% Middle Eastern American, 1% Native American Ages 3 to 5 years	High/Scope Child Observation Record Development Indicators for Assessment of Learning-Revised (DIAL-R)	2. The average level of program quality in all three settings was high (higher than in other current studies). 3. Center-based programs receiving subsidies are capable of operating at good or better levels of quality.
Field (1991)	Study 1: 28 children, 5 to 8 years, middle SES Study 2: 56 children (11.5 average age), middle SES Heterogeneous samples of race/ethnicity (including African American, White, Hispanic)	Child variables: self-drawing, Piers-Harris Self-Esteem, Internalizer/Externalizer, Behavior Rating Scale Parent/teacher variables: Internalizer/Externalizer, demographics Quality Indicators: For infants: separate sleep and play areas, teacher:infant ratio of 1:4 For toddlers: play areas, outdoor play, preschool prep curriculum, ratio of 1:5 For both: highly educated, stable teachers, with a positive atmosphere and high teacher morale	1. Study 1: Amount of time spent in full-time center care was positively correlated to the number of friends and extracurricular activities of the children. More time in the center was positively related to parents' ratings of the children's emotional well-being, leadership, popularity, attractiveness, and assertiveness, and negatively related to aggressivity. 2. Study 2: The more time spent in high-quality day care, the higher teachers rate children on emotional well-being, attractiveness, and assertiveness. The more time spent in high-quality day care, the more these children showed physical affection during peer interactions, were more often assigned to gifted programs, and received higher math grades.
Howes, Olenick, & Der-Kiureghian (1987)	30 kindergarten children (19 boys) attending one after-school program	Sociometric interview Behavior observation, including child-teacher and child-peer interactions	1. Children who attended the after-school program were more likely to be nominated as friends.

	One-third from single-parent families 15% special needs		2. The after-school experiences of these children were both complementary and continuous with their experiences in school.
Kontos (1991)	100 children in 10 centers Predominantly White Range of SES and urban/rural families 57% two-parent families Ages 3 to 5 years	Child Development Program Evaluation-Indicator Checklist Caregiver Observation Form Early Childhood Environmental Rating Scale Slosson Intelligence Test Test of Early Language Development Adaptive Language Inventory Preschool Behavior Questionnaire Classroom Behavior Inventory	1. Family background variables were significantly related to several measures of children's cognitive and language development. 2. Overall quality (a measure of a minimum level of quality) predicted better social adjustment scores and fewer behavior problems among children, controlling for family background and child care experience. 3. Age of entry into child care and duration of the child care experience were not significant predictors of child development outcomes.

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Relations between Family and Child Care

Reference	Sample Description	Measures	Results
Cryer & Burchinal (1997)	100 programs in CA, CO, NC, and CT (50 for profit, 50 nonprofit) 2,407 responses to preschool parent questionnaire and 727 responses to infant/toddler questionnaire Parents were mostly White (81%) and middle SES	Early Childhood Environmental Rating Scale Infant/Toddler Environmental Rating Scale Parent-adapted versions of Early Childhood Environmental Rating Scale and Infant Toddler Environmental Rating Scale Classroom observers	1. Parents gave high importance to scores for all aspects of care, with higher scores for interactions and health and safety items. 2. Parents gave their children's quality of care significantly higher ratings than did observers. 3. Easy to monitor aspects of care were rated more closely by observers and parents. 4. As parental values increased for an aspect of care, the difference between parent and observer quality scores increased.
Ghazvini & Readdick (1994)	12 child care centers Subsidized and nonsubsidized centers	Parental Perceptions of Communication Questionnaire Early Childhood Environmental Rating Scale	1. Caregivers rated all forms of parent-caregiver communication as more important and occurring more frequently than did parents. 2. Frequency of parent-caregiver communication and quality of child care were positively correlated.
Hofferth, Brayfield, Deich, & Holcomb (1991)	4,400 parents or guardians of children under the age of 13 (including families using care by relatives)	Telephone interviews	1. Quality was the characteristic most often cited in selecting their current arrangement.

	312 providers National sample		2. Parents cited provider-related aspects of quality as being the most important factor in choosing care. 3. 96% of parents were either very satisfied or satisfied with their current arrangement. 4. Families who desired a change cited quality as the reason and most often wanted to switch to a center or preschool.
Holloway & Reichhart-Erickson (1989)	55 children from 15 programs (32 boys) 52 Caucasian, 2 Black, and 1 Asian American Age 4 years	Adapted version of Spivack and Shure's problem-solving procedure Observations Teacher ratings of social competence Early Childhood Classroom Observation Scale	1. Mothers of socially competent children expected earlier acquisition of developmental skills. 2. Socially competent children attended programs with smaller classes and higher-quality caregiver-child interactions. 3. Mothers who expected early acquisition of developmental skills and those of higher SES tended to place their children in higher-quality child-care settings. 4. Caregiver-child interactions and group size contributed independently to children's social competence (controlling for home variables).
Kontos, Howes, Shinn, & Galinsky (1995)	820 mothers, 225 children, and 226 providers in CA, TX, and NC	Arnett Scale of Caregiver Sensitivity	1. Parents and providers agreed on most important elements: child safety, parent-provider

	42% White, 23% African American, 31% Hispanic Heterogeneous social classes and maternal educational levels 81% 2-parent families Ages 10 months to 5 years	Howes Involvement Scale Family Day Care Rating Scale Waters & Deane Attachment Q-set Smilansky's Cognitive Play Scale Limit Setting Measure Block & Block Child Rearing Attitudes Scale Adult Work Environment Providers' Perceptions of Quality	communication about child, warm relationship between provider and child. 2. 41% of mothers cited cost or convenience as important in their choice (often second). 3. 91% of mothers would choose the same provider again. 4. Children with more educated mothers and more responsive caregivers engaged in more high-level object play. 5. Higher global quality was related to more object play, more high-level object play, and better child attachment security. However, higher global quality was related to less high-level peer play. 6. Neither family background characteristics nor child care characteristics predicted children's language development or social adjustment. 7. Maternal working conditions and number of hours worked were unrelated to all aspects of children's development.
Schliecker, White, & Jacobs (1991)	100 children in 10 centers Predominantly White Range of SES 63% two-parent families Age 4 years	Observational assessment of classroom quality Direct assessment of child outcomes	1. Day care quality (measured dichotomously) and socioeconomic status (a combined measure of income, occupation, education, and family structure) both significantly predicted vocabulary comprehension. 2. Day care quality may be particularly important for single-parent, female-headed households.
Smith & Hubbard (1988)	60 children, as well as their parents and teachers in New Zealand	Daily parent records Interviews of parents and staff	1. When staff talked more with parents, and the relationship was warm and balanced, children talked

	41 to 60 months old	Rating scales for parents on parent-staff communication Observations of children's behavior Child-parent interactions Child-teacher interactions Child-peer interactions	more with their teachers. 2. Staff ratings of reciprocity and positive relationships with parents were related positively to child adjustment. 3. More talk between teachers and parents was related to fewer negative interactions between children and their peers.
Sonenstein & Wolf (1991)	382 AFDC mothers with children under 6 in Boston, Charlotte, and Denver, in 1983	Staff:child ratios Teacher training in child development Ratings by mothers on caregiver experience, learning opportunities for children, adequacy of supervision, discipline, safety, the ability to meet emotional needs of child, child feelings about caregiver, child's happiness, convenience, dependability, and cost	1. Mother's ratings resulted in no particular arrangement looking superior. 2. Convenient hours and adequate adult supervision were valued for preschoolers. 3. Low adult:child ratios and convenience were valued for children under 3 years old. 4. Child learning opportunities, happiness, and lower levels of caretaker experience were important for older preschoolers. 5. Type of care used was not directly associated with satisfaction.

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Family Child Care

Reference	Sample Description	Measures	Results
Fischer & Eheart (1991)	177 family day care providers (59 unlicensed) 1 non-English speaking	Telephone interviews Family Day Care Rating Scale	1. Training, affiliation with support networks, and years of schooling explain 69.83% of variations in caregiving practices. 2. Overall quality of care in family day care was low.
Goelman & Pence (1987)	105 children in 53 centers and 52 family day care providers Predominantly White (Canadian) SES varied 80% two-parent families Approximate ages 3 to 4 years (ages not provided)	Observational assessment and parent ratings of classroom quality Direct assessment of child outcomes (language, peer interactions)	1. Among children attending center-based care, quality of care did not predict language development scores. 2. Children in center-based care engaged in more high-quality "information activities" than did children in family day care. 3. However, for children in family day care, the amount of "information activities" was not related to quality. 4. Children attending high-quality family day care homes had higher average scores for language development than did children attending lower-quality family day care homes.
Howes & Stewart (1987)	55 children in 55 family day care homes	Observational assessment of family day care quality	1. More changes of family day care provider were

	Heterogeneous social classes and parent educational levels (including 18% low SES) 82% two-parent families Ages 11 to 30 months	Direct assessment and observer ratings of child outcomes	associated with lower-level play with objects and peers. 2. For boys, earlier child care entry and fewer changes in provider were also associated with higher-level play with objects. 3. Higher overall quality of care was related to higher levels of competent play with adults and with objects. For girls, the relationship was also significant for higher-level play with peers.
Kontos (1994)	57 children and 30 family day care providers Middle SES 83% two-parent families Ages 3½ to 4 years	Childrearing Practices Report Questionnaire on Social Support Cognitive Play Scale Peabody Picture Vocabulary Test-Revised Howes Peer Play Scale Classroom Behavior Inventory Family Day Care Rating Scale	1. Children in family day care homes that were rated at a higher level of overall quality were significantly less likely to engage in simple cognitive and social play, were rated as significantly more sociable, and scored higher in receptive vocabulary, controlling for maternal education, caregiver experience, and conditions of caregiving. 2. Children in higher-quality family day care homes who had mothers with more education and caregivers with less experience were rated as significantly more sociable. 3. Children in higher-quality family day care homes who had mothers with a higher level of education scored higher in receptive vocabulary.
Kontos, Howes, Shinn, & Galinsky (1995)	820 mothers, 225 children, and 226 providers in CA, TX, and NC	Arnett Scale of Caregiver Sensitivity Howes Involvement Scale	1. Parents and providers agreed on most important elements: child safety, parent-provider

	42% White, 23% African American, 31% Hispanic Heterogeneous social classes and maternal educational levels 81% 2-parent families Ages 10 months to 5 years	Family Day Care Rating Scale Waters & Deane Attachment Q-set Smilansky's Cognitive Play Scale Limit Setting Measure Block & Block Child Rearing Attitudes Scale Adult Work Environment Providers' perceptions of quality	communication about child, warm relationship between provider and child. 2. Provider sensitivity and responsiveness correlated with children being more attached to the caregiver. 3. Higher-quality providers committed to work seek learning opportunities, plan, seek out other providers, are regulated, have more children, charge more, and use standard business practices. 4. Children who spent more time with their caregiver, were cared for in homes with more children per adult, and had caregivers who used more responsive interactions engaged in greater amount of play with objects; children with more educated mothers and more responsive caregivers engaged in more high-level object play. 5. Larger group size and child:staff ratios were related to more peer play. 6. Higher global quality was related to more object play, more high-level object play, and better child attachment security. However, higher global quality was related to less high-level peer play. 7. Neither family background characteristics nor child care characteristics predicted children's language development or social adjustment.
Kontos, Howes, Shinn, & Galinsky (1994)	186 child care providers to African American, European American, and	Provider demographics Arnett Scale of Provider	1. Providers for moderate-income children were rated as more

	Latino children More than half of children were from very-low-income or low-income families	Sensitivity Adult Involvement Scale Family Day Care Rating Scale Howes Peer Play Scale (revised) Object Play Scale	sensitive than providers for very-low-income children. 2. Latino children were more uninvolved with objects and watched more television than did European American children. 3. The majority of children were cared for by a provider in the same ethnic group.
Kontos, Hsu, & Dunn (1994)	60 caregivers in 30 classrooms and 24 child care centers 117 children (55 boys, 60 in centers) Ages 30 to 60 months	Group size and adult:child ratio Childrearing Practices Report Adult-child interactions Early Childhood Environmental Rating Scale Family Day Care Rating Scale 2 cognitive play scales Slosson Intelligence Test Peer Play Scale Classroom Behavior Inventory-Preschool	1. There were significant differences in structure, process, and global quality characteristics between family day care homes and child care centers. 2. There were no differences in children's level of sociability between center care and home care. 3. Variations in caregiver training and how they interact with children make a difference to children's cognitive and social competence.

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Child Care in Inclusive Settings

Reference	Sample Description	Measures	Results
Buysse, Wesley, Bryant, & Gardner (1999)	180 child care centers in 12 regions of NC	Early Childhood Environmental Rating Scale	1. 34% of the early childhood programs reported enrolling at least one child with disabilities. 2. Inclusive programs scored significantly higher on the Early Childhood Environmental Rating Scale than did noninclusive programs 3. Teacher education, professional experience, and teacher self-ratings of knowledge and skill were predictors of global program quality.
File & Kontos (1993)	28 children in 6-12 center classrooms 50% had mild or moderate cognitive and/or speech and language delays Ages 2½ to 6 years	Observational Assessment of Quality Direct assessment of child outcomes	1. Positive teacher interactions with children were related to a higher level of children's social play. 2. Less teacher involvement in routine activities, less watching, less support of cognitive play, and more overall teacher uninvolvement were also related to higher levels of social play. 3. Children's experiences with their teachers were not related to their level of cognitive play

			of cognitive play).
La Paro, Sexton, & Snyder (1998)	58 community-based early childhood settings with at least one child with disabilities 29 segregated/29 inclusive Ages 3 to 5 years	Early Childhood Environmental Rating Scale Classroom Practices Inventory (CPI) Teacher Beliefs Scale (TBS) Instructional Activities Scale	1. Segregated and inclusive settings highly similar on global DAP ratings. 2. Levels of quality moderately good in both types of settings.

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